

REMARKS

At the outset, Applicants thank the Examiners for the assistance they have provided in the prosecution of the instant application.

After over a collective 25 years of experience in the repair and maintenance of roller systems in aircrafts, the inventors produced a novel aircraft roller that is more economical to manufacture, use, and maintain than those currently in use. Unlike prior aircraft rollers, the aircraft rollers of the instant application are rollers that consist essentially of a polymer.

Due to the unique conditions posed by air travel, only FAA approved rollers can be used in aircrafts. Among other things, aircraft rollers must be able to withstand rapid changes in pressure and/or temperature and meet standards such as maximum burn rates, characteristics not required of other rollers. The inventors sought and received FAA approval for their aircraft rollers. Both the FAA and DER (private sector liaisons between manufacturers and the FAA) were surprised that the inventors had made an approvable polymeric aircraft roller.

Status of the Claims

Pending Claims

Claims 14-27 and 30-33 are pending. Claims 28 and 29 have been withdrawn.

Claims amended in the instant amendment

In the instant response, Applicants submit that claim 14 has been amended to more particularly describe the claimed invention and does not change the scope of the claims. Claim 14 describes an aircraft roller having a burn rate of less than 4.0 inches per minute and joined to an aircraft. Support for the amendment can be found throughout the Specification in general, more specifically at least at page 4, lines 3-10, and page 5, lines 15-16. No new matter has been added by the amendments.

Specification

The specification has been objected to for containing a misspelling of the word polyvinylidene. The instant amendment to the specification overcomes this objection. No new matter has been added.

Objection to the claims

Claims 16 and 32 have been objected to for containing a misspelling of the word polyvinylidene. The instant amendment to the claims overcomes this objection. No new matter has been added.

Rejection under 35 USC 102

Claims 14, 15, 18-23, 25, 27, 30, and 31 are rejected under 35 USC 102(b) for allegedly being anticipated by Marcus et al. (US 5,217,099).

Applicants have amended claim 14, and therefore all the claims that depend either directly or indirectly from claim 14, so that the claim is directed toward an aircraft roller that is joined to an aircraft. Marcus purports to teach a corrosion resistant roller. Marcus, however, does not teach an aircraft roller joined to an aircraft. Marcus does not teach that his roller is suitable in an aircraft environment. Accordingly, Applicants submit that amended independent claim 14 and dependent claims 15, 18-23, 25, 27, 30, and 31 are not anticipated by Marcus under 35 USC 102 and respectfully request reconsideration and withdrawal of the rejection.

Rejection under 35 USC 103

Claims 16, 17, 19-22 (in alternative), 24, 26, 32, and 33 are rejected under 35 USC 103 for allegedly being unpatentable over Marcus (US 5,217,099).

Claims 16, 17, 19-22, 24, 26, 32, and 33 depend from and incorporate all the elements of claim 14. Amended claim 14 is drawn to a polymeric aircraft roller joined to an aircraft. As known by those of skill in the art, aircraft rollers are subject to certain conditions and must meet certain requirements that are not applicable to other kinds of rollers. As noted previously, flight can entail rapid fluctuations in air pressure and temperature and special considerations for air safety. Marcus, while purporting to teach a corrosion resistant roller, does not suggest nor does it provide motivation to one of ordinary skill in the art to practice the claimed invention, namely aircraft rollers. Supportive of this is the surprise expressed by the FAA and DER when the inventors sought approval for their aircraft roller. Accordingly, Applicants submit that claims 16, 17, 19-22, 24, 26, 32, and 33 are not rendered unpatentable by Marcus under 35 USC 103 and respectfully request reconsideration and withdrawal of the rejection.

Withdrawn claims 28 and 29

Applicants respectfully submit that amended claim 14 and dependent claims 15-27, and 30-33 are patentable. In light of this, claims 28 and 29, which also depend from and incorporate all the elements of claim 14, are patentable as well. Therefore, Applicants request that withdrawn claims 28 and 29 be found allowable as well.

CONCLUSION

Applicants respectfully request consideration of the claim amendments which more particularly describe the claimed invention. Applicants further submit that none of the references, Ando et al. (US 5,893,821), Sparkes et al. (2,258,268), Hill (US 3,293,728), Wolever et al. (US 1,305,330) and Couillard (US 6,113,059), render the instant claims unpatentable. Should the Examiner have any questions regarding this communication, the Examiner is urged to call the undersigned attorney at 781 285 3052.

A handwritten signature in black ink, appearing to read 'Mi K. Kim', with a long horizontal line extending to the right.

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CLAIMS AS AMENDED

Claims 1-13 (CANCELED).

Claim 14 (currently amended): An aircraft roller comprising:

- a) a roller consisting essentially of a cylindrical body, said body having a length and a diameter; and
- b) an aperture extending longitudinally along and through the center of said body, wherein said body consists essentially of a polymer, and wherein the roller has a burn rate of rate of less than 4.0 inches per minute and is joined to an aircraft.

Claim 15 (previously presented): The aircraft roller of claim 14, wherein the roller is a single piece component.

Claim 16 (currently amended): The aircraft roller of claim 14, wherein the polymer is selected from the group consisting of polysulfone, nylon, polycarbonate, polyetherimide, polyetherketone, polyphenylene sulfide and polyvinylidene fluoride and acetyl copolymer.

Claim 17 (previously presented): The aircraft roller of claim 14, wherein the polymer is acetyl copolymer.

Claim 18 (previously presented): The aircraft roller of claim 14 further having ends, wherein said ends are shaped to provide a shoulder.

Claim 19 (previously presented): The aircraft roller of claim 14 further having an impact strength of at least 0.5 ft. lbs./in.

Claim 20 (previously presented): The aircraft roller of claim 14 further having a flexural strength of at least 20 psi.

Claim 21 (previously presented): The aircraft roller of claim 14 further having a compressibility strength of at least 20 psi.

Claim 22 (previously presented): The aircraft roller of claim 14 further having a compressibility strength of at least 200 psi.

Claim 23 (previously presented): The aircraft roller of claim 14, wherein the diameter of the body of the roller is between $\frac{1}{4}$ of an inch to 12 inches.

Claim 24 (previously presented): The aircraft roller of claim 14, wherein the length of the body of the roller is between $\frac{1}{2}$ of an inch to 25 feet.

Claim 25 (previously presented): The aircraft roller of claim 14, wherein the diameter of the body of the roller is between $\frac{1}{2}$ of an inch to 6 inches.

Claim 26 (previously presented): The aircraft roller of claim 14, wherein the length of the body of the roller is between 3 inches to 4 inches.

Claim 27 (previously presented): An aircraft conveyor system comprising at least one aircraft roller of claim 14.

Claim 28 (withdrawn): A method of installing the aircraft roller of claim 14 to an aircraft conveyor system comprising:

- a) removing an existing roller from a shaft of the aircraft conveyor; and
- b) inserting the aircraft roller of claim 14 onto the shaft.

Claim 29 (withdrawn): The method of claim 28 further comprising the step of securing the roller to the aircraft conveyor with a retaining pin.

Claim 30 (previously presented): The aircraft roller of claim 14 manufactured by a method comprising the steps of:

- a) obtaining a round stock of polymer;
- b) boring an aperture longitudinally through the round stock of polymer; and
- c) cutting the round stock to length.

Claim 31 (previously presented): The aircraft roller of claim 30 further comprising the step of detailing ends of the cut round stock.

Claim 32 (currently amended): The aircraft roller of claim 30, wherein the polymer is selected from the group consisting of polysulfone, nylon, polycarbonate, polyetherimide, polyetherketone, polyphenylene sulfide and polyvinylidene fluoride and acetyl copolymer.

Claim 33 (previously presented): The aircraft roller of claim 30, wherein the polymer is acetyl copolymer.